



Media Release

Statewide Survey Finds Fish-Eating Birds at Risk From Mercury in Many California Lakes

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Sacramento - The first statewide survey of contaminants in wildlife from California waters has found that mercury concentrations in the blood of two closely related species of grebes were high enough to potentially translate to harmful impacts on their reproduction in over half of the 25 lakes sampled.

Published studies suggest that mercury concentrations in avian blood between 1.0 parts per million (ppm) and 3.0 ppm are associated with a moderate risk of effects on reproduction, and concentrations above 3.0 ppm are associated with high risk. Grebes with blood mercury above 1.0 ppm (moderate risk) were observed at 14 of the 25 lakes sampled. At seven lakes, more than 50 percent of the grebes had concentrations above 1.0 ppm. Grebes with blood mercury above 3.0 ppm (high risk) were observed at six of the 25 lakes. Lake Berryessa had the most severe contamination, with concentrations above 3.0 ppm in 88 percent of the grebes sampled.



Nesting Clark's grebe. Photograph by Alex Hartman, USGS

Western grebes and Clark's grebes were chosen as the wildlife indicator species because they are widely distributed and breed in lakes throughout California, are piscivorous (fish-eaters) near the top of the lake food chain, and are excellent indicators of lake-specific contaminant exposure.

This statewide survey was conducted in 2012 and 2013 by the U.S. Geological Survey (USGS) as part of the State Water Resources Control Board's Surface Water Ambient Monitoring Program (SWAMP). The findings are summarized in a technical report, *Estimating Exposure of Piscivorous Birds and Sport Fish to Mercury in California Lakes Using Prey Fish Monitoring - A Predictive Tool for Managers*. In addition to evaluating mercury risks to wildlife in a representative sample of California lakes, the study documented correlations between concentrations of mercury in birds and fish that can be used to estimate risk to birds in lakes

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where only fish data are available. The study also established methods for monitoring birds and fish in lakes to estimate mercury risk to wildlife.

"Our work demonstrates that grebes are at risk from mercury exposure in many lakes in California. Moreover, we developed a predictive tool to estimate mercury exposure risk to wildlife across California lakes, based on prey fish mercury concentrations," said Alex Hartman of USGS, one of the investigators leading the study.

Past SWAMP statewide surveys have shown that mercury concentrations in fish from many water bodies are high enough to pose a threat to human health, but the threat to wildlife health had not yet been assessed.

Mercury contamination of California lakes and reservoirs likely originates from multiple sources, including historic mercury, gold, and silver mining; global emissions to the atmosphere; and stormwater runoff.

The study was funded by the State Water Resources Control Board, the U.S. Environmental Protection Agency, and the U.S. Geological Survey.



A technical study on the study is available [here](#).

A [fact sheet and additional information](#) on the study are also available on the California Water Quality Monitoring Council's "My Water Quality" Healthy Streams, Rivers and Lakes Portal.

See also the [Wildlife Study Page](#).

The State Water Resources Control Board's mission is to preserve, enhance, and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.

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